Doc Code: AP.PRE.REQ

PRE-APPEAL BRIEF REQUEST FOR REVIEW	Docket Number (Optional) 67008-076;5656	

CERTIFICATE OF FACSIMILE	Application Number	Filed
I hereby certify that this Pre-Appeal Brief Request For Review and Notice of Appeal are being facsimile transmitted to (571) 273-8300.	10/676,775	10/1/2003
on 10-13-06	First Named Inventor	
Signature *Beth A Beard*	Kirk Charles Frederickson	
	Art Unit	Examiner
Typed or printed name Beth A. Beard	3682	Kiim, Chong Hwa

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
    Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☑ attorney or agent of record.
Registration number 46,350

☐ attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34 _____

Signature

David L. Wisz
Typed or printed name

248-988-8684
Telephone number

10-13-06
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____ forms are submitted.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Kirk Charles Frederickson

Serial No.:   10/676,775

Filed: October 1, 2003

Group Art Unit: 3682

Examiner: Van Pelt, Bradley J.

Title: HARMONIC FORCE GENERATOR FOR AN ACTIVE VIBRATION
CONTROL SYSTEM

### REQUEST FOR PRE-APPEAL BRIEF REVIEW

Dear Sir:

Claims 1, 2, 4, 5, 7, 23, and 24 were finally rejected under 35 U.S.C. §112, first paragraph. The Examiner argues that the phrase "rotationally fixed" raises a new matter issues since such description is not supported by the original specification or the drawings as filed. Appellant respectfully disagrees. Claim 1 is represented below for the board's conveience:

1.   A force generator comprising:

a rotationally fixed first circular member defined about a first axis to define a first inner diameter circular path, said first circular member having a first radius;

a second circular member defined about a second axis offset from said first axis to define a second radius, said second radius one-half the radius of said first radius, said second circular member movable about the circular path to simultaneously complete one revolution about said second axis and one orbit around said first axis;

a crank which mounts said second circular member, said crank rotatable about said first axis; and

a mass located at adjacent a circumference of said second circular member movable about a two-cusp hypocycloid path to generate a vibratory inertial force, to minimize a vibratory force.

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Figure 2B, as well as each of the other sectional views, illustrates the rotationally fixed member (first circular member 32) mounted to a housing (shaded; not numbered). A power source 30 is mounted to the housing to rotate the second circular member 36 through a crank 38.

FIG. 2A   **FIG. 2B**
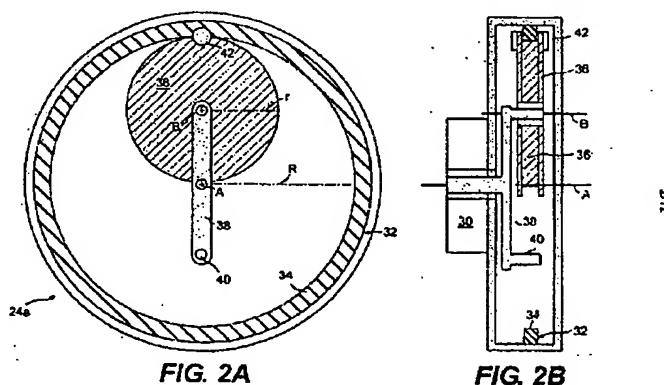
Notably, the rotationally fixed first circular member 32 is mounted directly to the housing with no indication of a component such as a bearing which would permit rotation relative to the housing. In other words, the housing supports both the first circular member 32 and the power source 30 such that the crank and the supported second circular member 36 may be rotated relative thereto as schematically depicted in Figure 3.

FIG. 3
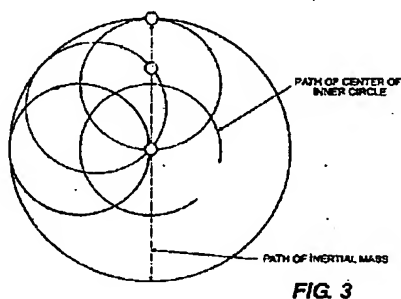
Figure 3 in particular, but also Figures 4 and 5A-5H schematically illustrate the motion of Appellant's invention. None of these figures give any indication whatsoever that the "rotationally fixed" first circular member 32 is anything but. That is, with particular reference to Figure 3, arrows are utilized to show movement of the movable members such that a proper interpretation of a lack of arrows is that the first circular member 32 is "rotationally fixed" as utilized in Appellant's claims. From the figures alone, but especially in combination with

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Appellant's specification and claims, Appellant respectfully submits that the phrase "rotationally fixed" is properly supported and cannot properly be considered new matter. Appellant respectfully requests that the final rejection be overturned.

Claims 1, 2, 4, 5, 7, 23, and 24 were finally rejected under 35 U.S.C. §112, second paragraph. The Examiner suggests that the phrase "rotationally fixed" is indefinite because it is not clear what is meant by "rotationally fixed." The Examiner states:

> 6.   Claims 1, 2, 4, 5, 7, 23, and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
>
> Claim 1 recites the newly included phrase "rotationally fixed" in line 2. It is indefinite because it is not clear what it means by "rotationally fixed". Is the first circular member fixed and rotational? Or, is the first circular member not moving at all (and if so, in relative to what element)?
>
> (Note: for the purpose of complete examination of the application, the phrase "rotationally fixed" has been construed as being rotatable and fixed to the axis A.)

Initially, Appellant's usage of the phrase "rotationally fixed" is definite as a claimed two-cusp hypocycloid path would be unachievable were the first circular member not "rotationally fixed." That is, a two-cusp hypocycloid path is defined as:
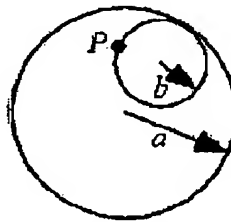
The curve produced by fixed point P on the circumference of a small circle of radius b rolling around the inside of a large circle of radius $a > b$. A hypocycloid is therefore a hypotrochoid with $h = b$.

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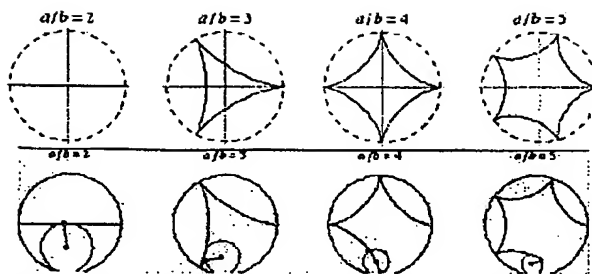
An n-cusped hypocycloid has $a/b = n$. For $n = a/b$ an integer and with $x(0) = a$, the equations of the hypocycloid therefore become

$$x = \frac{a}{n}[(n-1)\cos\phi - \cos[(n-1)\phi]] \tag{12}$$

$$y = \frac{a}{n}[(n-1)\sin\phi + \sin[(n-1)\phi]] \tag{13}$$

and the arc length and area are therefore

$$s_e = 8b(n-1) = \frac{8a(n-1)}{n} \tag{14}$$

$$A_n = \frac{(n-1)(n-2)}{n^2}\pi a^2. \tag{15}$$

A 2-cusped hypocycloid is a line segment (Steinhaus 1999, p. 145; Kanas 2003), as can be seen by setting $a = 2b$ in equations (◇) and (◇) and noting that the equations simplify to

$$x = a\sin\phi \tag{16}$$

$$y = 0. \tag{17}$$

http://mathworld.wolfram.com/Hypocycloid.html

That is, were the Examiner's interpretation to control, Appellant could not even achieve the claimed two-cusp hypocycloid path. For this reason alone, Applicant's rejected claims are definite.

Furthermore, the claims specifically recite <u>a crank which mounts said second circular member, said crank rotatable about said first axis</u> and <u>a rotationally fixed first circular member defined about the first axis</u> such that the claim is definite with regard to the rotationally fixed first circular member being "rotationally fixed" relative to the first axis. Appellant respectfully submits that the claim language on its face is definite and properly allowable.

Appellant would like to further note that even the Examiner specifically admits in the Response to Argument section of the July 14, 2006 office action, that liberty has been taken so as to construe the meaning of the phrase in question to mean "rotatable and fixed to the axis." Appellant submits that such *liberty taking* is improper and that the Examiner's interpretation of

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the phrase "rotationally fixed" as being "rotatable and fixed to the axis A" is itself internally inconsistent and in opposition to the plain meaning of Appellant's claim language which specifically recites: **a rotationally fixed first circular member defined about the first axis.** The Examiner's parsing of Appellant's claim language is improper. Under no proper interpretation can Appellant's claim language be construed as "rotatable about." Appellant respectfully submits that by properly interpreting the phrase "rotationally fixed," not only are the 35 U.S.C. §112 rejections overcome, but that the 35 U.S.C. §102(b) rejections over *Kanski* are also properly overcome.

Applicant believes that no additional fees are necessary, however, the Commissioner is authorized to charge deposit account 19-2189 for any additional fees or credit the account for any overpayment.

Respectfully Submitted,

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Dated: October 13, 2006

CERTIFICATE OF FACSIMILE

I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office, (571) 273-8300, on October 13, 2006.

Beth A Beard

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